Illawarra Shoalhaven Local Health District

Emergency Medicine Fellowship Program

Topic-Based Quiz: Qs and As

Surgery 1

Candidate Instructions

- Duration = 30min
- Props are included within the examination booklets
- Allocated marks for each question are shown
- Each mark is of equal weight
- There is no negative marking
- Write answers CLEARLY, and cross out any errors
- Answer within space provided
- Do not begin until instructed
- You may take examination book home with you

Good Luck!

Acknowledgement: Thank you to the trainees who have written these SAQs with the hope of making their colleagues sweat, but ultimately gain more exposure to exam practice. Good job.

Topic-Based SAQ Quiz: Surgery 1

Question 1

You are evaluating a 23 year old man with left sided testicular pain that has been present the last 2 days. He has no significant comorbidities. You suspect testicular torsion.

What is the significance of a horizontal-lying testicle on examination (2 marks)?

_____

_____

List 2 other features on clinical exam that are typically associated with testicular torsion (2 marks)

_____

_____

What is the gold standard method for diagnosis of testicular torsion? (1 mark)

_____

_____

Regarding prognosis of testicular torsion, complete the following table (3 marks)

Time to correction	Testicular survival
0-6hr	
6-12hr	
12-18hr	
18-24hr	
24-48hr	
>48hr	

Topic-Based SAQ Quiz: Surgery 1

If you are working in a hospital where timely access to theatre is a problem, manual detorsion of the testicle can be performed. Outline how to perform this and 2 problems with performing this manoeuvre (4 marks)

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_____

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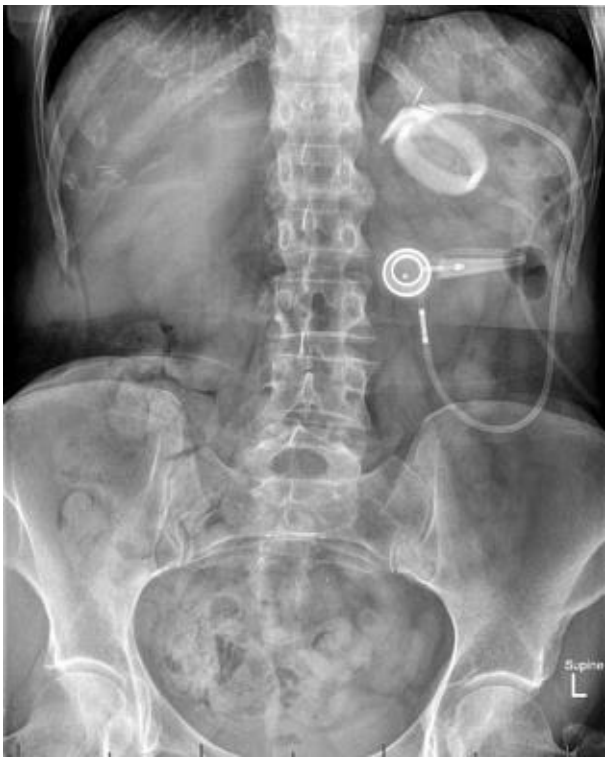
Question 2

A 32 year old woman comes to the ED with persistent vomiting and epigastric discomfort. She has no other symptoms. She has no significant comorbidities with the exception of significant weight loss following laparoscopic gastric banding done 3 years ago.



What is the most significant finding on this AXR? What is the normal appearance? (2 marks)

_____

_____

_____

_____

What is the diagnosis? (1 mark)

_____

How common is this? (1 mark)

_____

Topic-Based SAQ Quiz: Surgery 1

List 2 complications of this condition (2 marks)

_____

_____

Outline your management (4 marks)

_____

_____

_____

_____

Question 3

A 26 year old woman who is breastfeeding her 3 week old girl has developed fevers, rigors and left breast pain. She is haemodynamically stable and you suspect mastitis.

Name 2 organisms that commonly cause mastitis? (2 marks)

_____

_____

You decide to admit the woman and place her on intravenous antibiotics. Please outline two antimicrobial regimens (include dose, route and frequency)

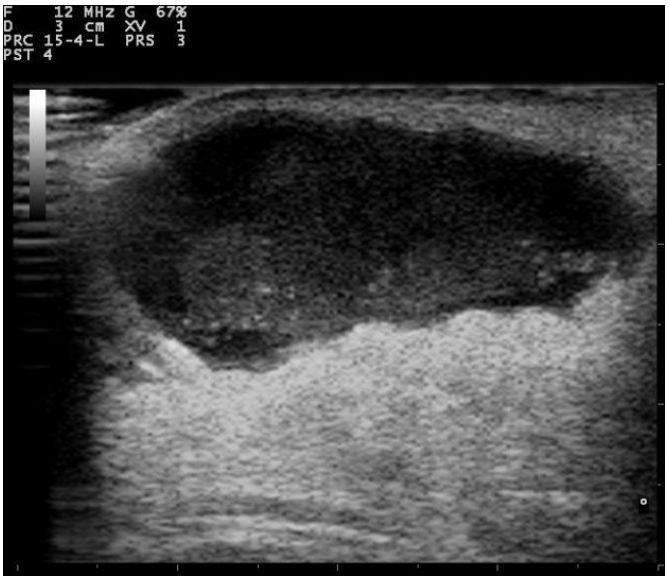
First Line (1 mark)

_____

Beta-lactam allergy (1 mark)

_____

You obtain an ultrasound (picture below) of the area of most tenderness.



Describe the image and state the most likely diagnosis (2 marks)

_____

_____

Outline the preferred management of the above condition (2 marks)

_____

_____

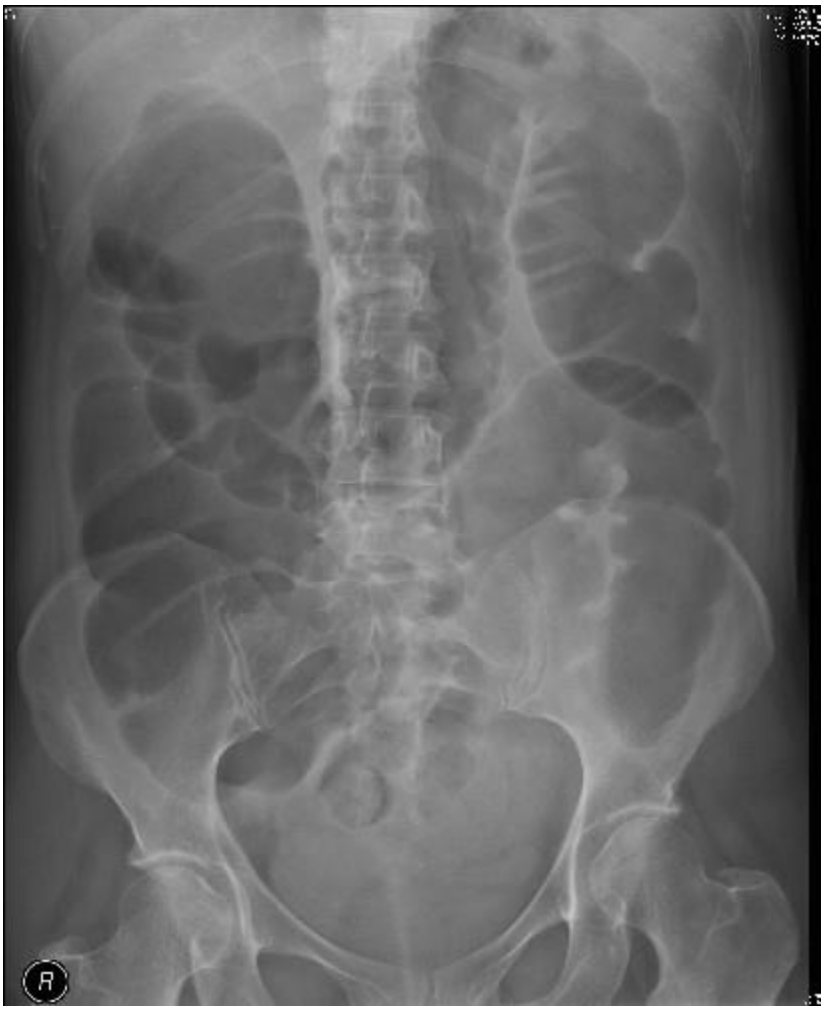
Outline 2 important aspects of the supportive management (non-pharmacological) of mastitis (2 marks)

_____

_____

Question 4

A 72 year old man comes to the ED with abdominal pain. He has a history of hypertension and dyslipidaemia and had an appendicectomy as a child. His vital signs are normal but you find abdominal distension without clinical ascites on exam and order an AXR.



What is the most likely diagnosis? (1 mark)

_____

List 2 features on this AXR that suggest this diagnosis (2 marks)

_____

_____

Topic-Based SAQ Quiz: Surgery 1

List 4 underlying causes of this condition. Which is the most likely in this case? (4 marks)

_____

_____

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_____

Question 5

You are caring for a 23 year old man with right iliac fossa abdominal pain who is systemically well. You have given him analgesia and suspect acute appendicitis. You have ordered an abdominal ultrasound.

List 3 specific findings of acute appendicitis on ultrasound (3 marks)

_____

_____

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_____

The ultrasound is consistent with appendicitis. State 2 important findings from randomised trials comparing IV antibiotics to appendicectomy. (2 marks)

_____

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_____

Topic-Based SAQ Quiz: Surgery 1

There is a long delay to the operating theatre and the patient is still in the emergency department 6 hours later. The nurse caring for him alert you to the fact that he has worsening generalised abdominal pain and his vital signs are:

T 38.7
P130
BP 75/60
RR 30
SaO2 97% RA

Describe the 4 main aspects of your management in this situation (4 marks)

_____

_____

_____

_____

_____

_____

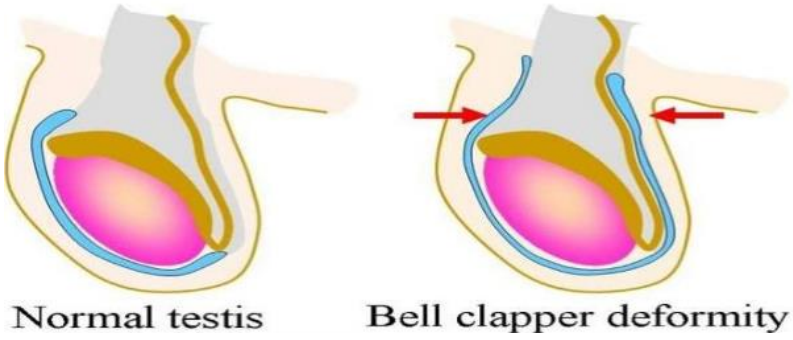
Topic-Based SAQ Quiz: Surgery 1

ANSWERS

Question 1

What is the significance of a horizontal-lying testicle on examination (2 marks)?

- Horizontal lie suggests bell-clapper deformity
- Failure of posterior attachment (tunica vaginalis joins high on spermatic cord) that predisposed to torsion



List 2 other features on clinical exam that are typically associated with testicular torsion (2 marks)

- High riding testicle
- Loss of cremasteric reflex
- Globally tender

What is the gold standard method for diagnosis of testicular torsion? (1 mark)

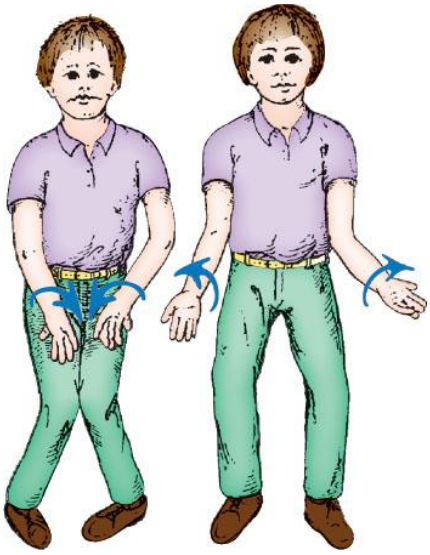
- Scrotal exploration

Regarding prognosis of testicular torsion, complete the following table (3 marks)

Time to correction	Testicular survival
0-6hr	97%
6-12hr	79%
12-18hr	61%
18-24hr	42%
24-48hr	24%
>48hr	7%

Mellick, LB et al. **Torsion of the testicle: it is time to stop tossing the dice.** Pediatr Emerg Care. 2012 Jan;28(1):80-6.PMID: 22217895

If you are working in a hospital where timely access to theatre is a problem, manual detorsion of the testicle can be performed. Outline how to perform this and 2 problems with performing this manoeuvre (4 marks)



- Analgesia/sedation
- Grasp testicle and externally rotate 360o
- Bedside US post – demonstrate return of flow / improved symptoms

Problems

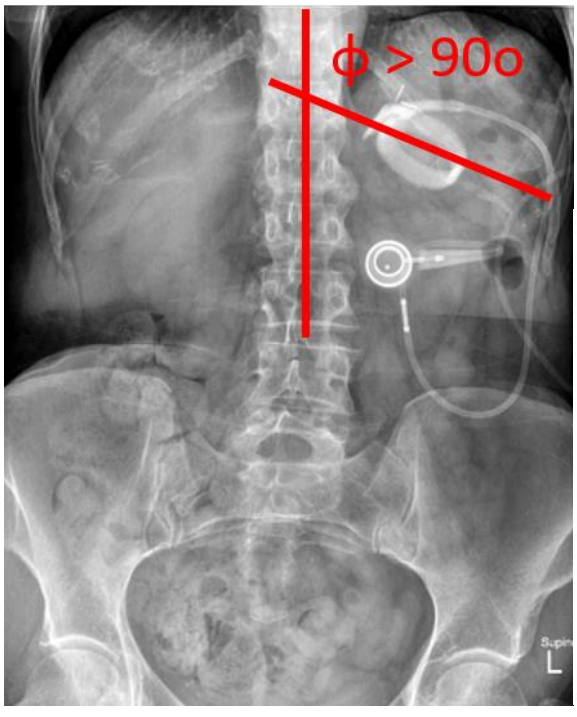
- 1/3 of torsion occurs in opposite direction
- Can be twisted > 360o (some >1080o)

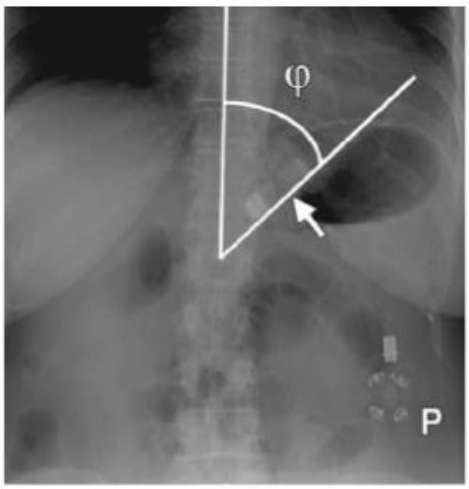
Question 2

What is the most significant finding on this AXR? What is the normal appearance? (2 marks)

Phi angle significantly greater than normal (usually 4-58o). Suggest band slippage.

The Phi (ϕ) angle of the band is the angle formed by a straight line through the long axis of the band and a vertical line through the spinal column





What is the diagnosis? (1 mark)

Band slippage

Topic-Based SAQ Quiz: Surgery 1

How common is this? (1 mark)

12%, usually occurs after 3 months
This is a fairly typical presentation

List 2 complications of this condition (2 marks)

- Intolerance of food/fluid – dehydration and its consequences
- Gastric necrosis / perforation

Outline your management (4 marks)

- Analgesia / Antiemetics (not prokinetic)
- NBM / IV Fluids (deficit + maintenance)
- Aspirate balloon to deflate (usually ~5mL)
- Refer to surgical team to facilitate further inpatient Ix and Mx
    - May get contrast study or CT with PO contrast to assess for perforation
    - Often get endoscopy and/or laparoscopy to identify further damage

Question 3

List 2 risk factors for mastitis (2 marks)

Risk factors for mastitis:

- Incomplete breast drainage due to:
    - Poor positioning and attachment
    - Missed feeds or long intervals between feeds
    - Tongue-tie
- Restrictive clothing/external pressure on the breast
- Trauma to breasts or nipples
- Engorgement and/or chronic oversupply
- Unresolved blocked ducts or white spot on the nipple (blocked nipple pore)
- Rapid or abrupt weaning
- Stress, fatigue, overall poor health and nutrition
- Previous history of mastitis

Name 2 organisms that commonly cause mastitis? (2 marks)

- Staphylococcus aureus (essential)
    - MRSA becoming increasingly common
- Beta-haemolytic streptococcus e.g. group A strep
- E Coli

You decide to admit the woman and place her on intravenous antibiotics. Please outline two antimicrobial regimens (include dose, route and frequency)

First Line (1 mark)

Flucloxacillin 2g IV q6H
Cephazolin 2g IV TDS

Beta-lactam allergy (1 mark)

Lincomycin 600mg IV q8H
Clindamycin 450mg IV q8H

Describe the image and state the most likely diagnosis (2 marks)

Hypoechoic, round region beneath the skin
Breast abscess

Outline the preferred management of the above condition (2 marks)

Needle aspiration
- I&D not done as first line

Up to 3x daily needle aspirations / usually US-guided

Outline 2 important aspects of breast-feeding advice for this patient (2 marks)

- Continue breastfeeding on affected side
  - May need to re-position baby if aspirations done or drain in-situ
- See midwife / lactation consultant to determine underlying trigger and prevent future

Question 4

What is the most likely diagnosis? (1 mark)

Large Bowel Obstruction

List 2 features on this AXR that suggest this diagnosis (2 marks)

Dilated Large bowel - larger calibre, haustra, peripherally-located

No air in rectum / seems to be transition point in distal sigmoid

List 4 underlying causes of this condition. Which is the most likely in this case? (4 marks)

Colorectal cancer – most likely

- Strictures: Ischaemic, Diverticular, Inflammatory Bowel disease
- Hernia
- Faecal impaction
- Volvulus (not this appearance)
- Pseudo-obstruction

Question 5

List 3 specific findings of acute appendicitis on ultrasound (3 marks)

- Non-compressible appendix
- Diameter >7mm

Other findings may include:

- appendicolith
- thickened appendiceal wall
- abscess
- fluid around the appendix

The ultrasound is consistent with appendicitis. State 2 important findings from randomised trials comparing IV antibiotics to appendicectomy. (2 marks)

- In uncomplicated appendicitis
  - IV Antibiotics similar efficacy to appendicectomy
  - Lower surgical morbidity
  - Significant proportion of patients still required appendicectomy later

Describe the 4 main aspects of your management in this situation (4 marks)

- Analgesia: Titrated fentanyl aliquots 25-50mcg
- IV Antibiotics: Ampicillin 2g, Gentamicin 400mg, Metronidazole 500mg IV STAT
- Haemodynamic support: IV Hartmanns 500mL bolus' (up to 30mL/kg) to target MAP 65mmHg, add noradrenaline infusion if still not meeting this target
- Notify surgical team / expedite surgery / notify anaesthetist of development of septic shock